

## CLAIMS:

1.           Electronic circuit, comprising: a first MOSFET and a second MOSFET;  
wherein the first MOSFET and the second MOSFET are arranged parallel to each other;  
wherein the first MOSFET has a first resistance when it is switched on and the second  
MOSFET has a second resistance when it is switched on; and a MOSFET resistance  
5 control circuit for individually controlling at least one of the first resistance of the first  
MOSFET and the second resistance of the second MOSFET.
2.           The electronic circuit of claim 1, wherein the MOSFET resistance  
control circuit comprises a gate voltage control circuit for individually controlling at  
10 least one of a first gate voltage of the first MOSFET and a second gate voltage of the  
second MOSFET to thereby control at least one of the first resistance of the first  
MOSFET and the second resistance of the second MOSFET.
3.           The electronic circuit of claim 2, wherein the gate voltage control circuit  
15 controls the at least one of the first and second voltages such that at least one of the first  
and second resistances, first and second currents flowing through the first and second  
MOSFETs and first and second temperatures of the first and second MOSFETs are  
adjusted to each other.
- 20 4.           The electronic circuit of claim 2, further comprising a current measuring  
unit for measuring at least one of a first current flowing through the first MOSFET and  
a second current flowing through the second MOSFET; wherein the gate voltage  
control circuit is adapted to individually control the at least one of the first and second  
voltages on the basis of at least one of the first and second currents.
- 25 5.           The electronic circuit of claim 2, further comprising a temperature sensor

for measuring at least one of a first temperature of the first MOSFET and a second temperature of the second MOSFET; wherein the gate voltage control circuit is adapted to individually control the at least one of a first and second voltages on the basis of the at least one of the first and second temperatures.

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6. The electronic circuit of claim 5, wherein the gate voltage control circuit controls the at least one of a first and second voltages only when one of the first and second temperatures exceeds a first preset threshold value.

10 7. The electronic circuit of claim 5, wherein the temperature sensor is adapted for measuring the first temperature and the second temperature; and wherein the gate voltage control circuit controls the at least one of a first and second voltages only when a difference of the first and second temperatures exceeds a second preset value.

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8. The electronic circuit of claim 1, wherein the first resistance of the first MOSFET is the  $R_{DSon}$  of the first MOSFET and the second resistance of the second MOSFET is the  $R_{DSon}$  of the second MOSFET.

20 9. The electronic circuit of claim 1, wherein the electronic circuit is a power module in particular for the use in automotive applications.

10. Method of operating a first MOSFET and a second MOSFET, wherein the first MOSFET and the second MOSFET are arranged parallel to each other, wherein  
25 the first MOSFET has a first resistance when it is switched on and the second MOSFET has a second resistance when it is switched on, the method comprising the step of: individually controlling at least one of the first resistance of the first MOSFET and the second resistance of the second MOSFET.

30 11. The method of claim 10, further comprising the step of: individually controlling at least one of a first gate voltage of the first MOSFET and a second gate

voltage of the second MOSFET to thereby control at least one of the first resistance of the first MOSFET and the second resistance of the second MOSFET such that the first and second resistances are adjusted to each other.

- 5 12. The method of claim 11, further comprising the steps of: measuring at least one of a first current flowing through the first MOSFET and a second current flowing through the second MOSFET individually controlling the at least one of the first and second voltages on the basis of at least one of the first and second currents.
- 10 13. The method of claim 11, further comprising the steps of: measuring at least one of a first temperature of the first MOSFET and a second temperature of the second MOSFET; individually controlling the at least one of a first and second voltages on the basis of the at least one of the first and second temperatures.
- 15 14. The method of claim 13, further comprising the step of: controlling the at least one of a first and second voltages only when one of the first and second temperatures exceeds a first preset threshold value.
15. The method of claim 13, further comprising the steps of: measuring the  
20 first temperature and the second temperature; and individually controlling the at least one of a first and second voltages only when a difference of the first and second voltages exceeds a second preset value.